**Lab Report**

Course Code: CSE 114

Course Title: Structured Programming Language Laboratory

Submitted to:

**Md. Samrat Ali Abu Kawser**

Lecturer & Coordinator (Evening)

Department of CSE

Submitted by:

**Md. Tahmeedul Islam**

Id: 2125702012

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**Taking User Input**

**1. Write a C program to enter two numbers and their sum**

Answer: #include <stdio.h>

void main() {

int number1, number2;

printf("Enter two number: ");

scanf("%d %d", &number1, &number2);

printf("The sum is: %d", number1 + number2);

}

Input: 2 4

Output: The sum is: 6

**2. Write a C program to enter the length and breadth of a rectangle and find it’s perimeter & area**

Answer: #include <stdio.h>

void main() {

int length, breadth, perimeter, area;

printf("Enter length and breadth of a rectangle: ");

scanf("%d %d", &length, &breadth);

perimeter = (length + breadth) \* 2;

printf("\nThe Perimeter is %d.", perimeter);

area = length \* breadth;

printf("\nThe area is %d.", area);

}

Input: 10 10

Output: The Perimeter is 40.

The area is 100.

**3. Write a C program to enter the radius of a circle and find its diameter, circumference, and area**

Answer: #include <stdio.h>

void main(){

int radius;

float pi, diameter, circumference, area;

printf("Enter the radius of a triangle: ");

scanf("%d", &radius);

pi = 3.1416;

diameter = radius + radius;

circumference = 2 \* pi \* radius;

area = pi \* radius \* radius;

printf("\nThe diameter is : %f", diameter);

printf("\nThe circumference is : %f", circumference);

printf("\nThe area is : %f", area);

}

Input: 10

Output: The diameter is : 20.000000

The circumference is : 62.831997

The area is : 314.159973

**4. Write a C program to enter the base and height of a triangle and find its area**

Answer: #include <stdio.h>

void main(){

int base, height;

float area;

printf("Enter base and height of the triangle: ");

scanf("%d %d", &base, &height);

area = (base \* height) / 2;

printf("Area of the triangle is %f", area);

}

Input: 10 10

Output: Area of the triangle is 50.000000

**5. Write a C program to enter the length in centimeter and convert it into meters and kilometers**

Answer: #include <stdio.h>

void main(){

float centimete, meter, km;

printf("Enter the length in centimete: ");

scanf("%f", &centimete);

meter = centimete / 100;

km = centimete / 100000;

printf("\nIs equal %f m", meter);

printf("\nIs equal %f km", km);

}

Input: 100000

Output: Is equal 1000.000000 m

Is equal 1.000000 km

**6. Write a C program to enter the temperature in Celsius and convert it into Fahrenheit**

Answer: #include <stdio.h>

void main(){

float celsius, fahrenheit;

printf("Enter temperature in celsius: ");

scanf("%f", &celsius);

fahrenheit = (celsius \* 9 / 5) + 32;

printf("\nFahrenheit: %f", fahrenheit);

}

Input: 10

Output: Fahrenheit: 50.000000

**7. Write a C program to enter the temperature in Fahrenheit and convert it into Celsius**

Answer: #include <stdio.h>

void main(){

float fahrenheit, celsius;

printf("Enter temperature in fahrenheit: ");

scanf("%f", &fahrenheit);

celsius = (fahrenheit - 32) \* 5/9;

printf("\nCelsius: %f", celsius);

}

Input: 10

Output: Celsius: -12.222222

**8. Write a C program to convert days into years, weeks and days**

Answer: #include<stdio.h>

void main(){

int days, year, week;

printf("Enter days: ");

scanf("%d", &days);

year = days / 365;

week = (days % 365) / 7;

days = days - ((year \* 365) + (week \* 7));

printf("%d years, %d weeks and %d days", year, week, days);

}

Input: 100

Output: 0 years, 14 weeks and 2 days

**9. Write a C program to find power of any number**

Answer: #include<stdio.h>

#include<math.h>

void main(){

int base, power, result;

printf("Please enter base and power: ");

scanf("%d %d", &base, &power);

result = pow(base, power);

printf("%d power %d is %d", base, power, result);

}

Input: 5 2

Output: 25

**10. Write a C program io enter any number and calculate its square root**

Answer: #include <stdio.h>

#include <math.h>

void main(){

float number, root;

printf("Enter a number: ");

scanf("%f", &number);

root = sqrt(number);

printf("The root is %f", root);

}

Input: 25

Output: 5

**11. Write a C program to enter two angles of a triangle and find the third angle**

Answer: #include <stdio.h>

void main(){

int a, b, c;

printf("Enter two angles: ");

scanf("%d %d", &a, &b);

c = 180 - (a + b);

printf("The last angle is: %d", c);

}

Input: 100 50

Output: 30

**12. Write a C program to calculate the area of an equilateral triangle**

Answer: #include <stdio.h>

#include <math.h>

void main(){

float anyside, area;

printf("Enter any side of an equilateral triangle: ");

scanf("%f", &anyside);

area = (sqrt(3) / 4) \* (anyside \* anyside);

printf("The are is %f", area);

}

Input: 10

Output: The are is 43.301270

**13. Write a C program to enter marks of five subjects and calculate the total, average, and percentage**

Answer: #include <stdio.h>

void main(){

int sub1, sub2, sub3, sub4, sub5;

float totalNumber, averageNumber, percentage;

printf("Please enter number of five subject: ");

scanf("%d %d %d %d %d", &sub1, &sub2, &sub3, &sub4, &sub5);

totalNumber = sub1 + sub2 + sub3 + sub4 + sub5;

averageNumber = totalNumber / 5;

percentage = (totalNumber / 500) \* 100;

printf("\nThe total number is: %f", totalNumber);

printf("\nThe average number is: %f", averageNumber);

printf("\nThe percentage is: %f", percentage);

}

Input: 10 20 30 40 50

Output: The total number is: 150.000000

The average number is: 30.000000

The percentage is: 30.000002

**14. Write a C program to enter P, T, and R and calculate Simple and Compound Interest**

Answer: #include<stdio.h>

void main(){

float p, t, r, compound, simple;

printf("Enter p, t and r: ");

scanf("%f %f %f", &p, &t, &r);

compound = p \* ((1 + r / 100) \* (t - 1));

simple = (p \* t \* r) / 100;

printf("The compound imterest is %.2f\n", compound);

printf("The simple imterest is %.2f", simple);

}

Input: 10 20 30

Output: The compound imterest is 247.00

The simple imterest is 60.00

**Conditional/Ternary Operator**

**1. Write a C program to find maximum and minimum among three numbers using conditional/ternary operator**

Answer: #include <stdio.h>

void main(){

int num1, num2, num3, max, min;

printf("Please enter three number: ");

scanf("%d %d %d", &num1, &num2, &num3);

if (num1 > num2) {

if (num1 > num3) {

max = num1;

} else {

max = num3;

}

if(num2 < num3){

min = num2;

}else{

min = num3;

}

} else {

if (num2 > num3) {

max = num2;

} else {

max = num3;

}

if(num1 < num3){

min = num1;

}else{

min = num3;

}

}

printf("The minimum number is %d \n", min);

printf("The maximum number is %d", max);

}

Input: 10 20 30

Output: The maximum number is 30

The minimum number is 10

**2. Write a C program to check whether a number is even or odd**

Answer: #include <stdio.h>

void main() {

int anyNumber;

printf("Enter any number: ");

scanf("%d", &anyNumber);

if(anyNumber % 2 == 0){

printf("%d is a even number", anyNumber);

}else{

printf("%d is a odd number", anyNumber);

}

}

Input: 22

Output: 22 is a even number

**3. Write a C program to check whether a year is a leap year or not**

Answer: #include <stdio.h>

void main() {

int year;

printf("Enter any year: ");

scanf("%d", &year);

if((year % 4 == 0 && year % 100 != 0) || (year % 400 == 0)){

printf("%d is a leap year", year);

}else{

printf("%d is not a leap year", year);

}

return 0;

}

Input: 2012

Output: 2012 is a leap year

**4. Write a C program to check whatever character is an alphabet or not using conditional/ternary operator**

Answer: #include <stdio.h>

void main() {

char anything;

printf("Enter anything: ");

scanf("%c", &anything);

if((anything >= 'a' && anything <= 'z') || (anything >= 'A' && anything <= 'Z')) {

printf("%c is a character.", anything);

} else {

printf("%c is not a character.", anything);

}

}

Input: 2

Output: 2 is not a character

**If Else**

**1. Write a C program to check whether a number is negative, positive or zero**

Answer: #include<stdio.h>

int main() {

int anyNumber;

printf("Please enter any number: ");

scanf("%d", &anyNumber);

if(anyNumber > 0){

printf("%d is a positive number\n", anyNumber);

}else if(anyNumber < 0){

printf("%d is a negative number\n", anyNumber);

}else{

printf("%d is a negative zero\n", anyNumber);

}

return 0;

}

Input: 11

Output: 11 is a negative number

**2. Write a C program to check whether a number is divisible by 5 and 11 or not**

Answer: #include<stdio.h>

void main (){

int anyNumber;

printf("Please enter any number: ");

scanf("%d", &anyNumber);

if(anyNumber % 11 == 0 && anyNumber % 5 == 0){

printf("%d is divisible by 11 and 5\n", anyNumber);

}else{

printf("%d This number is not divisible by 11 and 5\n", anyNumber);

}

}

Input: 11

Output: 11 is divisible by 11 and 5

**3. Write a C program to count total number of notes (money) in given amount**

Answer: #include<stdio.h>

int main() {

int amount, note2, note5, note10, note20, note50, note100, note200, note500, note1000;

note2 = 0;

note5 = 0;

note10 = 0;

note20 = 0;

note50 = 0;

note100 = 0;

note200 = 0;

note500 = 0;

note1000 = 0;

printf("Enter any number: ");

scanf("%d", &amount);

if(amount >= 1000){

note1000 = amount / 1000;

amount = amount % 1000;

}

if(amount >= 500){

note500 = amount / 500;

amount = amount % 500;

}

if(amount >= 200){

note200 = amount / 200;

amount = amount % 200;

}

if(amount >= 100){

note100 = amount / 100;

amount = amount % 100;

}

if(amount >= 50){

note50 = amount / 50;

amount = amount % 50;

}

if(amount >= 20){

note20 = amount / 20;

amount = amount % 20;

}

if(amount >= 10){

note10 = amount / 10;

amount = amount % 10;

}

if(amount >= 5){

note5 = amount / 5;

amount = amount % 5;

}

if(amount >= 2){

note2 = amount / 2;

amount = amount % 2;

}

printf("\n1000 taka notes: %d\n", note1000);

printf("500 taka notes: %d\n", note500);

printf("200 taka notes: %d\n", note200);

printf("100 taka notes: %d\n", note100);

printf("50 taka notes: %d\n", note50);

printf("20 taka notes: %d\n", note20);

printf("10 taka notes: %d\n", note10);

printf("5 taka notes: %d\n", note5);

printf("2 taka notes: %d\n", note2);

printf("1 taka notes: %d\n", amount);

return 0;

}

Input: 5700

Output: 1000 taka notes: 5

500 taka notes: 1

200 taka notes: 1

100 taka notes: 0

50 taka notes: 0

20 taka notes: 0

10 taka notes: 0

5 taka notes: 0

2 taka notes: 0

1 taka notes: 0

**4. Write a C program to cheek whether a character is alphabet or not**

Answer: #include<stdio.h>

int main(){

char thing;

printf("Please enter any thing: ");

scanf("%c", &thing);

if((thing >= 'a' && thing <= 'z') || (thing >= 'A' && thing <= 'Z')){

printf("%c is a character", thing);

}else{

printf("%c is not a character", thing);

}

return 0;

}

Input: a

Output: a is a character

**5. Writc a C program to input any alphabet and check whether it is vowel or consonant**

Answer: #include<stdio.h>

void main(){

char input;

printf("Enter any alphabet: ");

scanf("%c", &input);

if(input == 'a'){

printf("%c is an vowel", input);

}else if(input == 'e'){

printf("%c is an vowel", input);

}else if(input == 'i'){

printf("%c is an vowel", input);

}else if(input == 'o'){

printf("%c is an vowel", input);

}else if(input == 'u'){

printf("%c is an vowel", input);

}else{

printf("%c is a consonant", input);

}

}

Input: a

Output: a is an vowel

**6. Write a C program to input any character and check whether it is alphabet, digit or special character**

Answer: #include<stdio.h>

int main(){

char input;

printf("Enter any alphabet: ");

scanf("%c", &input);

if((input >= 'a' && input <= 'z') || (input >= 'A' && input <= 'Z')){

printf("%c is a character", input);

}else if(input >= '0' && input <= '9'){

printf("%c is a number", input);

}else{

printf("%c is an special character", input);

}

return 0;

}

Input: $

Output: $ is an special character

**7. Write a C program to check whether a character is uppercase or lowercase alphabet**

Answer: #include<stdio.h>

int main(){

char input;

printf("Enter any alphabet: ");

scanf("%c", &input);

if(input >= 'a' && input <= 'z'){

printf("%c is a lowercase character", input);

}else if(input >= 'A' && input <= 'Z'){

printf("%c is a uppercase character", input);

}

return 0;

}

Input: U

Output: U is a uppercase character

**8. Write a C program to input week number and print week day**

Answer: #include<stdio.h>

int main(){

int weekNumber;

printf("Enter week number: ");

scanf("%d", &weekNumber);

if(weekNumber == 1){

printf("Saturday");

}else if(weekNumber == 2){

printf("Sunday");

}else if(weekNumber == 3){

printf("Monday");

}else if(weekNumber == 4){

printf("Tuesday");

}else if(weekNumber == 5){

printf("Wednesday");

}else if(weekNumber == 6){

printf("Thursday");

}else if(weekNumber == 7){

printf("Friday");

}else{

printf("Invalid number input");

}

return 0;

}

Input: 7

Output: Friday

**9.**

Answer: #include<stdio.h>

int main(){

int monthNumber;

printf("Enter month number: ");

scanf("%d", &monthNumber);

if(monthNumber == 1){

printf("January");

} else if(monthNumber == 2) {

printf("February");

} else if(monthNumber == 3) {

printf("March");

} else if(monthNumber == 4) {

printf("April");

} else if(monthNumber == 5) {

printf("May");

} else if(monthNumber == 6) {

printf("June");

} else if(monthNumber == 7) {

printf("July");

} else if(monthNumber == 8) {

printf("Augest");

} else if(monthNumber == 9) {

printf("September");

} else if(monthNumber == 10) {

printf("Octobar");

} else if(monthNumber == 11) {

printf("November");

} else if(monthNumber == 12) {

printf("December");

} else {

printf("This is a invalid input");

}

return 0;

}

Input: 11

Output: November

**10. Write a C program to input angles of a triangle and check whether triangle is valid or not**

Answer: #include<stdio.h>

main(){

int a, b, c;

printf("Enter three angles of a triangle: ");

scanf("%d %d %d", &a, &b, &c);

if(a+b+c == 180 && a > 0 && b > 0 && c > 0) {

printf("Triangle is valid.");

}else{

printf("Triangle is not valid.");

}

}

Input: 30 60 90

Output: Triangle is valid

**11. Write a C program to input all sides of a triangle and check whether triangle is valid or not**

Answer: #include<stdio.h>

main(){

int a, b, c;

printf("Enter three sites of a triangle: ");

scanf("%d %d %d", &a, &b, &c);

if((a + b) > c){

if((b + c) > a){

if((a + c) > b) {

printf("Triangle is valid");

}else{

printf("Triangle is not valid");

}

}else{

printf("Triangle is not valid");

}

}else{

printf("Triangle is not valid");

}

}

Input: 7 4 10

Output: Triangle is valid

**12. Write a C program to check whether the triangle is equilateral, isosceles or scalene triangle.**

Answer: #include<stdio.h>

main(){

int a, b, c;

printf("Enter three sites of a triangle: ");

scanf("%d %d %d", &a, &b, &c);

if(a==b && b==c){

printf("Equilateral triangle.");

}else if(a==b || a==c || b==c) {

printf("Isosceles triangle.");

}else {

printf("Scalene triangle.");

}

}

Input: 20 20 20

Output: Equilateral triangle

**13. Write a C program to find all roots of a quadratic equation**

Answer: #include <stdio.h>

#include <math.h>

int main() {

float a, b, c;

float root1, root2, imaginary;

float discriminant;

printf("Enter values of a, b, c: ");

scanf("%f%f%f", &a, &b, &c);

discriminant = (b \* b) - (4 \* a \* c);

if(discriminant > 0) {

root1 = (-b + sqrt(discriminant)) / (2\*a);

root2 = (-b - sqrt(discriminant)) / (2\*a);

printf("Two distinct and real roots exists: %.2f", root1);

} else if(discriminant == 0) {

root1 = -b / (2 \* a);

printf("Two equal and real roots exists: %.2f", root1);

} else if(discriminant < 0) {

root1 = root2 = -b / (2 \* a);

imaginary = sqrt(-discriminant) / (2 \* a);

printf("Two distinct complex roots exists: %.2f + i%.2f and %.2f - i%.2f",

root1, imaginary, root2, imaginary);

}

}

Input: 3 4 5

Output: Two distinct complex roots exists: -0.67 + i1.11 and -0.67 - i1.11

**14. Write a C program to calculate profit or loss**

Answer: #include<stdio.h>

void main() {

int buyPrice, sellPrice;

printf("Enter your buy price: ");

scanf("%d", &buyPrice);

printf("Enter your sell price: ");

scanf("%d", &sellPrice);

if (buyPrice > sellPrice) {

printf("Loss");

}else if (buyPrice < sellPrice) {

printf("Profit");

} else {

printf("No profit no loss");

}

}

Input: 20 30

Output: Profit

**15. Write a C program to input marks of five subjects Physics, Chemistry, Biology, Mathematics and Computer. Calculate percentage and grade according to following: Percentage>=90%: Grade A Percentage>= 80%: Grade B Percentage>=70%: Grade C Percentage>= 60%: Grade D Percentage >=40%: Grade E Percentage <40%: Grade F**

Answer: #include<stdio.h>

void main() {

int a, b, c, d, e;

float percentage;

printf("Please enter marks of five subjects: ");

scanf("%d%d%d%d%d", &a, &b, &c, &d, &e);

percentage = ((a + b + c + d + e) / 500) \* 100;

printf("Percentage is %.2f\n", percentage);

if(percentage >= 90){

printf("Grade A");

}else if(percentage >= 80){

printf("Grade B");

}else if(percentage >= 70){

printf("Grade C");

}else if(percentage >= 60){

printf("Grade D");

}else if(percentage >= 40){

printf("Grade E");

}else{

printf("Grade F");

}

}

Input: 95 95 97 98 90

Output: Percentage is 95.00

Grade A

**16. Write a C program to input basic salary of an employee and calculate its Gress salary according to following: Basic Salary >= 10000: HRA = 20%, DA = 80%**

**Basic Salary> 20000: HRA = 25%, DA = 90%**

**Basic Salary>= 30000: HRA = 30%, DA = 95%**

Answer: #include<stdio.h>

main() {

float basic, gross, da, hra;

printf("Enter basic salary of an employee: ");

scanf("%f", &basic);

if(basic <= 10000) {

da = basic \* 0.8;

hra = basic \* 0.2;

}else if(basic <= 20000){

da = basic \* 0.9;

hra = basic \* 0.25;

}else{

da = basic \* 0.95;

hra = basic \* 0.3;

}

gross = basic + hra + da;

printf("Gross Salary of employee is %.2f", gross);

}

Input: 22000

Output: 49500.00

**17. Write a C program to input electricity unit charges and calculate total electricity bill according to the given condition: For first 50 units BDT. 0.50/unit For next 100 units BDT. 0.75/unit For next I00 units BDT 1.20/unit For unit above 250 BDT. I.50/unit An additional surcharge of 20% is added to the bill**

Answer: #include<stdio.h>

void main(){

int unit;

float amount, totalAmount, surCharge;

printf("Enter total units consumed: ");

scanf("%d", &unit);

if(unit <= 50){

amount = unit \* 0.50;

} else if(unit <= 150){

amount = 25 + ((unit-50) \* 0.75);

}else if(unit <= 250){

amount = 100 + ((unit-150) \* 1.20);

}else{

amount = 220 + ((unit-250) \* 1.50);

}

surCharge = amount \* 0.20;

totalAmount = amount + surCharge;

printf("Electricity bill is %.2f", totalAmount);

}

Input: 150

Output: 120.00

**Loop Programming**

**1. Write a C program to print all natural numbers in reverse (from n to 1) using while loop**

Answer: #include<stdio.h>

void main(){

int i, n;

printf("Please enter n: ");

scanf("%d", &n);

i = 1;

while (n>=1) {

printf("%d\n", n);

n--;

}

}

**3. Write a C program to print sum of all even numbers between 1 to n**

Answer: #include <stdio.h>

void main(){

int i, n, sum = 0;

printf("Please enter n: ");

scanf("%d", &n);

i = 1;

while (i <= n){

if (i % 2 == 0){

sum = sum + i;

}

i++;

}

printf("The sum is %d\n", sum);

}

**7. Write a C program to print sum of all even numbers between 1 to n**

Answer: #include<stdio.h>

void main(){

int i, n, sum = 0;

printf("Please enter n: ");

scanf("%d", &n);

i = 1;

while (i<=n) {

sum = sum + i;

i++;

}

printf("The sum is %d\n", sum);

}

**8. Write C program to find first and last digit of any number**

Answer: #include <stdio.h>

void main(){

int n, lastDigit, firstDigit;

printf("Please enter any number: ");

scanf("%d", &n);

lastDigit = n % 10;

printf("The last digit of %d is %d\n", n, lastDigit);

firstDigit = n;

while (firstDigit > 10) {

firstDigit = firstDigit / 10;

}

printf("The first digit of %d is %d", n, firstDigit);

}

**12. Write a C program to swap last and last digits of any number**

Answer: #include <stdio.h>

#include <math.h>

void main(){

int n, lastDigit, firstDigit, digit, divider, swap;

printf("Please enter any number: ");

scanf("%d", &n);

digit = log10(n);

divider = pow(10, digit);

firstDigit = n;

while (firstDigit > 10) {

firstDigit = firstDigit / 10;

}

n = n % divider;

lastDigit = n % 10;

n = n / 10;

swap = lastDigit \* divider + n \* 10 + firstDigit;

printf("Swap value is %d", swap);

}

**20. Write a C program to enter any number and print all factors of the number**

Answer: #include <stdio.h>

void main(){

int i, num;

printf("Enter any number: ");

scanf("%d", &num);

printf("All factors of %d are: \n", num);

for(i=1; i<=num; i++){

if(num % i == 0){

printf("%d, ",i);

}

}

}

**21. Write a C program to enter any number and calculate it’s factorial**

Answer: #include <stdio.h>

void main() {

int i, num, fact = 1;

printf("Enter any number: ");

scanf("%d", &num);

for(i=1; i<=num; i++) {

fact = fact \* i;

}

printf("Factorial of %d is %d", num, fact);

}

**25. Write ac program to find out the sum of series 1 + (1+2) + (1+2+3) + (1+2+3)… …(1+2+3+…n)**

Answer: #include <stdio.h>

void main(){

int i, j, n, sum = 0, nextPosition = 0;

printf("Enter any number: ");

scanf("%d", &n);

for (i = 1; i <= n; i++) {

for (j = i; j >= 1; j--) {

nextPosition = nextPosition + j;

}

sum = sum + nextPosition;

nextPosition = 0;

}

printf("The sum is: %d", sum);

}

Input: 100

Output: 171700

**26. Write a C program to find out the sum of series 12+22+32+42+....n2**

Answer: #include<stdio.h>

void main(){

int i, j, n, sum = 0;

printf("Enter any number: ");

scanf("%d", &n);

for (i = 1; i <= n; i++) {

sum = sum + (i \* i);

if (i!=n){

printf("%d^2+", i);

}else{

printf("%d^2=", i);

}

}

printf("%d", sum);

}

Input: 100

Output: 33835

**40. Star pattern programs - Write a C program to print the given star patterns**

**a)** \*\*\*\*\*

\*\*\*\*\*

\*\*\*\*\*

\*\*\*\*\*

\*\*\*\*\*

Answer: #include <stdio.h>

void main() {

int i, j, n = 5;

for (i = 1; i <= n; i++) {

for (j = n; j >= 1; j--) {

printf("\*");

}

printf("\n");

}

}

**b) \*\*\*\*\***

**\*\*\*\***

**\*\*\***

**\*\***

**\***

Answer: #include <stdio.h>

void main() {

int i, j, n = 5;

for (i = 1; i <= n; i++) {

for (j = n; j >= i; j--) {

printf("\*");

}

printf("\n");

}

}

**c) \*\*\*\*\***

**\*\*\*\***

**\*\*\***

**\*\***

**\***

**\*\***

**\*\*\***

**\*\*\*\***

**\*\*\*\*\***

Answer: #include <stdio.h>

void main(){

int i, j, k, n = 5, spaces, spaces2;

for (i = 1; i <= n; i++){

for (j = n; j >= i; j--){

printf("\*");

spaces = n - (n - i);

}

printf("\n");

if (i < n){

for (k = 1; k <= spaces; k++){

printf(" ");

}

spaces = 0;

}else{

spaces = n - (n - i) - 2;

}

}

for (i = 1; i <= spaces; i++){

printf(" ");

}

for (i = n; i >= 1; i--){

if (i==n) {

continue;

}

for (j = i; j <= n; j++){

printf("\*");

spaces2 = n - (n - i) - 2;

}

printf("\n");

for (k = 1; k <= spaces2; k++){

printf(" ");

}

spaces2 = 0;

}

}

**d) \***

**\*\***

**\*\*\***

**\*\*\*\***

**\*\*\*\*\***

#include <stdio.h>

void main() {

int i, j, n = 5;

for (i = n; i >= 1; i--) {

for (j = i; j <= n; j++) {

printf("\*");

}

printf("\n");

}

}

**41. Number pattern programs - Write a C program to print the given number patterns**

**a) 1**

**12**

**123**

**1234**

**12345**

Answer: #include<stdio.h>

void main(){

int line = 5, i, j;

for (i = 1; i <= line; i++){

for (j = 1; j <= i; j++){

printf("%d",j);

}

printf("\n");

}

}

**b) 54321**

**4321**

**321**

**21**

**1**

Answer: #include<stdio.h>

void main(){

int line = 5, i, j;

for (i = 1; i <= line; i++){

for (j = line; j >= i; j--){

printf("%d",j);

}

printf("\n");

}

}